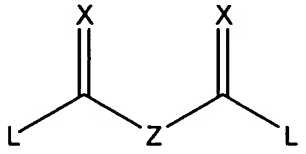
CLAIMS

Claims 1-62. **(canceled)**

63. **(currently amended)** A crosslinked hydrogel, comprising a hydrophilic polymer; and a crosslinker selected from the group consisting of a compound of ~~any of claims 1-27~~ formula **1** and a compound of formula **2**, wherein said compound of formula **1** is represented by:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloyl$O(CR_2)_nC(O)$-, 2-alkylacryloyl$O(CR_2)_nC(O)$-, 3-alkylacryloyl$O(CR_2)_nC(O)$-, 2,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 3,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 2,3,3-trialkylacryloyl$O(CR_2)_nC(O)$-, (diene)C(O)-, (vinyl)$(CR_2)_nC(O)$-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents $(CR_2)_n$, $(CR_2)_nJ(CR_2)_m$, or $(CR_2)_nAr(CR_2)_m$;

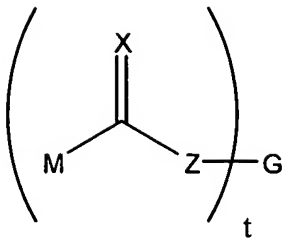
Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, $(CH_2CH_2O)_n$, or $(CH_2CH_2N(R))_n$;

n represents independently for each occurrence an integer in the range 1-10; and

m represents independently for each occurrence an integer in the range 0-10; and

said compound of formula **2** is represented by:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloyl$O(CR_2)_nC(O)$-, 2-alkylacryloyl$O(CR_2)_nC(O)$-, 3-alkylacryloyl$O(CR_2)_nC(O)$-, 2,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 3,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 2,3,3-trialkylacryloyl$O(CR_2)_nC(O)$-, (diene)C(O)-, (vinyl)$(CR_2)_nC(O)$-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents $(CR_2)_n$, $(CR_2)_nJ(CR_2)_m$, or $(CR_2)_nAr(CR_2)_m$;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, $(CH_2CH_2O)_n$, or $(CH_2CH_2N(R))_n$;

G represents $(CR_{(4-t)})$, aryl, or heteroaryl;

n represents independently for each occurrence an integer in the range 1-10; and

t represents 3 or 4.

64. (**original**) The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer comprises an acrylic acid, acrylate, or acrylamide.

65. (**original**) The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer comprises acrylic acid, 2-hydroxyethyl acrylate, oligo(ethylene glycol) 2-methacrylate, acrylamide, N,N-dimethylacrylamide, or N-(tris(hydroxymethyl)methyl)acrylamide.

66. **(original)** The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer consists of a first acrylamide and a second acrylamide.

67. **(original)** The crosslinked hydrogel of claim 66, wherein said first acrylamide is acrylamide or N,N-dimethylacrylamide.

68. **(original)** The crosslinked hydrogel of claim 66, wherein said second acrylamide is N-(tris(hydroxymethyl)methyl)acrylamide.

69. **(original)** The crosslinked hydrogel of claim 66, wherein said first acrylamide is acrylamide or N,N-dimethylacrylamide; and said second acrylamide is N-(tris(hydroxymethyl)methyl)acrylamide.

70. **(original)** The crosslinked hydrogel of claim 66, wherein said hydrophilic polymer consists of an acrylamide and an acrylate.

71. **(original)** The crosslinked hydrogel of claim 70, wherein said acrylamide is acrylamide or N,N-dimethylacrylamide.

72. **(original)** The crosslinked hydrogel of claim 70, wherein said acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

73. **(original)** The crosslinked hydrogel of claim 70, wherein said acrylamide is acrylamide or N,N-dimethylacrylamide; and said acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

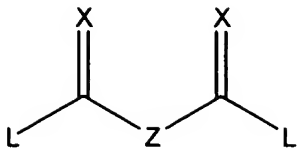
74. **(original)** The crosslinked hydrogel of claim 63, wherein said hydrophilic polymer consists of a first acrylate and a second acrylate.

75. **(original)** The crosslinked hydrogel of claim 74, wherein said first acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

76. **(original)** The crosslinked hydrogel of claim 74, wherein said first acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate; and said second acrylate is acrylic acid, 2-hydroxyethyl acrylate, or oligo(ethylene glycol) 2-methacrylate.

Claims 77-82. **(canceled)**

83. **(original)** A method of preparing a crosslinked hydrogel, comprising a hydrophilic polymer and a crosslinker represented by **1**:



1

wherein

X represents independently for each occurrence O or S;

L represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloyl$O(CR_2)_nC(O)$-, 2-alkylacryloyl$O(CR_2)_nC(O)$-, 3-alkylacryloyl$O(CR_2)_nC(O)$-, 2,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 3,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 2,3,3-trialkylacryloyl$O(CR_2)_nC(O)$-, (diene)C(O)-, (vinyl)$(CR_2)_nC(O)$-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents $(CR_2)_n$, $(CR_2)_nJ(CR_2)_m$, or $(CR_2)_nAr(CR_2)_m$;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, $(CH_2CH_2O)_n$, or $(CH_2CH_2N(R))_n$;

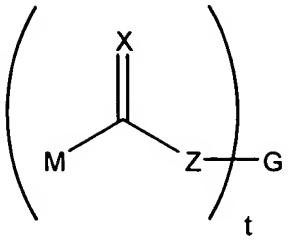
n represents independently for each occurrence an integer in the range 1-10; and

m represents independently for each occurrence an integer in the range 0-10;

comprising:

a) reacting a monomer represented by **1** with a hydrophilic monomer in the presence of an initiator.

84. **(original)** A method of preparing a crosslinked hydrogel, comprising a hydrophilic polymer and a crosslinker represented by **2**:



2

wherein

X represents independently for each occurrence O or S;

M represents independently for each occurrence -NH-O-Q, or -O-NH-Q;

Q represents independently for each occurrence acryloyl, 2-alkylacryloyl, 3-alkylacryloyl, 2,3-dialkylacryloyl, 3,3-dialkylacryloyl, 2,3,3-trialkylacryloyl, acryloyl$O(CR_2)_nC(O)$-, 2-alkylacryloyl$O(CR_2)_nC(O)$-, 3-alkylacryloyl$O(CR_2)_nC(O)$-, 2,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 3,3-dialkylacryloyl$O(CR_2)_nC(O)$-, 2,3,3-trialkylacryloyl$O(CR_2)_nC(O)$-, (diene)C(O)-, (vinyl)$(CR_2)_nC(O)$-, or (vinyl)ArC(O)-;

R represents independently for each occurrence H or alkyl;

Z represents $(CR_2)_n$, $(CR_2)_nJ(CR_2)_m$, or $(CR_2)_nAr(CR_2)_m$;

Ar represents independently for each occurrence aryl or heteroaryl;

J represents independently for each occurrence O, S, NR, cycloalkyl, heterocyclyl, $(CH_2CH_2O)_n$, or $(CH_2CH_2N(R))_n$;

G represents $(CR_{(4-t)})$, aryl, or heteroaryl;

n represents independently for each occurrence an integer in the range 1-10; and

t represents 3 or 4;

comprising:

a) reacting a monomer represented by **1** with a hydrophilic monomer in the presence of an initiator.

85. (**new**) The crosslinked hydrogel of claim 63, wherein said crosslinker is said compound of formula **1**.

86. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O.

87. (**new**) The crosslinked hydrogel of claim 85, wherein L represents -NH-O-Q.

88. (**new**) The crosslinked hydrogel of claim 85, wherein L represents -O-NH-Q.

89. (**new**) The crosslinked hydrogel of claim 85, wherein Q represents acryloyl, or 2-methacryloyl.

90. (**new**) The crosslinked hydrogel of claim 85, wherein R represents H.

91. (**new**) The crosslinked hydrogel of claim 85, wherein Z represents $(CR_2)_n$.

92. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; and L represents -NH-O-Q.

93. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; and L represents -O-NH-Q.

94. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; L represents -NH-O-Q; and Q represents acryloyl, or 2-methacryloyl.

95. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; L represents -O-NH-Q; and Q represents acryloyl, or 2-methacryloyl.

96. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; L represents -NH-O-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.

97. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; L represents -O-NH-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.

98. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; L represents -NH-O-Q; Q represents acryloyl, or 2-methacryloyl; R represents H; and Z represents $(CR_2)_n$.

99. (**new**) The crosslinked hydrogel of claim 85, wherein X represents O; L represents -O-NH-Q; Q represents acryloyl, or 2-methacryloyl; R represents H; and Z represents $(CR_2)_n$.

100. (**new**) The crosslinked hydrogel of claim 63, wherein said crosslinker is said compound of formula **2**.

101. (**new**) The crosslinked hydrogel of claim 100, wherein X represents O.

102. (**new**) The crosslinked hydrogel of claim 100, wherein M represents -NH-O-Q.

103. (**new**) The crosslinked hydrogel of claim 100, wherein M represents -O-NH-Q.

104. (**new**) The crosslinked hydrogel of claim 100, wherein Q represents acryloyl, or 2-methacryloyl.

105. (**new**) The crosslinked hydrogel of claim 100, wherein R represents H.

106. (**new**) The crosslinked hydrogel of claim 100, wherein X represents O; and M represents -NH-O-Q.

107. (**new**) The crosslinked hydrogel of claim 100, wherein X represents O; and M represents -O-NH-Q.

108. (**new**) The crosslinked hydrogel of claim 100, wherein X represents O; M represents -NH-O-Q; and Q represents acryloyl, or 2-methacryloyl.

109. (**new**) The crosslinked hydrogel of claim 100, wherein X represents O; M represents -O-NH-Q; and Q represents acryloyl, or 2-methacryloyl.

110. (**new**) The crosslinked hydrogel of claim 100, wherein X represents O; M represents -NH-O-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.

111. (**new**) The crosslinked hydrogel of claim 100, wherein X represents O; M represents -O-NH-Q; Q represents acryloyl, or 2-methacryloyl; and R represents H.